Case Report

International Journal of Neurology and Neurosurgery
Volume 8 Number 2, July - December 2016
DOI: http://dx.doi.org/10.21088/ijnns.0975.0223.8216.4

Spontaneous Regression of Large Herniated Lumbar Disc with Remission of Symptoms

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Abstract

In adults and older age group, Low back pain is exceedingly and eminently widespread and frequent and is the most familiar and repeated reason for seeking medical attention. Herniated lumbar disc accounts for majority of cases in them necessitating further refinement in management strategy. However unconstrained and spontaneous disappearance of large herniated lumbar disc has been reported very rarely in the literature till the time being. The authors report a distinctive and particular case of spontaneous regression of a large extruded lumbar disc in a 50 year old male. The patient presented with remarkably large lumbar extruded disc with backache and progressive neurological deficits and counseled for surgical discectomy but patient was lost on follow up. Later on the disc regressed spontaneously with improvement in clinical symptoms & evidenced by MRI scan done after 6 months. This paper has reviewed various literature & also discussed possible mechanism of disc regression with its impact on outcome.

Keywords: Lumbar Disc Herniation; Spontaneous Regression; MRI, Foraminal Stenosis; Cauda Equina Syndrome.

Introduction

Low backache is exceptionally and remarkably noteworthy appearance of adults with increasing age with herniated lumbar disc being the utmost and justified reason. However spontaneous extinction of large herniated lumbar disc and melting away of clinical symptoms in patients without any surgical treatment are reported infrequently [3,4].First reported case of herniated lumbar disc regression by Guinto [6] wayback in 1984 using computed tomography (CT) as a imaging tool had opened the door for others to analyse the phenomenon behind this. In this article we have done a comprehensive literature review, in context to a infrequent case of spontaneous regression of large herniated lumbar disc. Our amalgamation and analysis focuses on the clinical, radiographical, and pathophysiological characteristics of patients undergoing spontaneous regression of herniated disc.

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Case Presentation

The index case is a 50 years old male patient having history of low backache for 5 years with back stiffness. Five years prior, the patient experienced moderate intensity back pain while carrying a heavy box, but lumbar X-ray was normal and the patient was successfully treated with physical therapy. At present, the patient complained of a one-month history of severe backache in addition to left buttock and leg pain after a strenuous maneuver at the work. The patient expressed difficulty in walking, along with severe radiating pain to left lower limb with left ankle & extensor hallucis longus (EHL) weakness (2/5). One month after the acute symptom onset, an Magnetic Resonance Imaging (MRI) of the lumbar spine revealed a large, left-sided L5-S1 extruded disc fragment. Straight leg raising test was positive on left side on 20 degree. The fragment was compressing thecal sac and left L5 nerve root (Figure 1,2). The patient was prescribed oral analgesics and also advised definitive surgery, but however patient could

not turned up due to family obligations. Six months after initial presentation, the patient came with subsidence of backache and left sided radiculopathy, also improvement in power of left ankle & EHL from 2/5 to 4/5 . Straight-leg test was negative and patient was able to raise his legs up to 60 degrees. A repeat MRI at this time revealed complete resolution of the extruded disc fragment (Figure 3,4). It was decided to manage the patient conservatively with regular physiotherapy. Follow-up examination 6 weeks later showed marked clinical improvement with 4+/5 power in left ankle and EHL. Sensation, reflexes, bowel and bladder functions remained undisturbed.

Fig. 1: Saggital section T2 MRI LS spine - s/o hypo intense extruded disc at L5-S1 level.

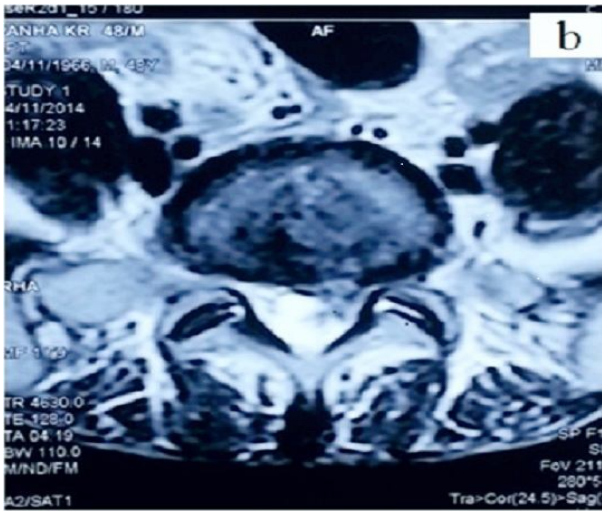

Fig. 2: T2 axial view s/o extruded disc at L5-S1 level with left foraminal stenosis.

Fig. 3: T2 sagittal section mri 6 months after first MRI shows completely resolved disc material at same level.

Fig. 4: T2 axial section 6 months after first MRI shows completely disappeared disc material.

Discussion

Lumbar disc herniations (LDH), with annual incidence of 5 per 1000 adults are most usual and unexceptional cause of radiculopathy [7].Currently, five subtypes of LDH are observed in the literature: bulging discs, focal protrusions, broad-based protrusions, extrusions, and sequestrations(most severe form) [1]. Regression of herniated discs has been described at different levels [4,6,7].Various hypotheses have been described in the literature regarding this phenomenon. The first hypothesis states retraction of herniated disc into the

intervertebral disc space that was protruding through annulus fibrosus but not separated from it [5,7,10]. The second hypothesis states that the disc regression is due to gradual dehydration leading to shrinkage [5,7,10]. The last hypothesis takes into account enzymatic degradation and phagocytosis of cartilaginous tissue due to inflammatory reaction and neovascularization of disc herniation [5,7,10]. The vascular mechanism of the resorption is the local reaction around the disc fragments, proliferation of the blood vessels and migration of the phagocytes towards disc material. Our patient with a large extruded lumbar disc showed spontaneous regression and larger fragments have a higher water content that regress through dehydration / shrinkage, retraction and inflammation -mediated resorption [3,4].

Magnetic resonance imaging (MRI) have become imaging of choice to evaluate disc and its pathologies. In several studies involving lumbar spine MRI, it has been demonstrated that the sizeable lumbar disc herniations are most likely to show the greatest regression in size over time [4]. Contrast material accumulation within the vascularized granulation tissue surrounding the avascular sequestrated disc presents as rim enhancement on MRI often and it disappears or regresses markedly in 75- 100% of cases [8,12]. 63% of patients had shown a decrease in disc protrusion in the analysis done by Bozzao et al [4]. 68 out of 160 enrolled patients had reported decreased herniated lumbar disc volume 2 months after the development of symptoms in the series published by Autio [2] well documented by MRI. Other studies had documented approximately 35-63% spontaneous regression of herniated lumbar discs on follow up during a 6 month to 1 year period [7]. In a retrospective cohort study, Saal and Saal demonstrated that lumbar disc herniation with radiculopathy can be successfully treated with non operative procedures resulting in "good to excellent" outcomes for approximately 90% of patients [9]. In another study, Takada and Takahashi reported that the time period for spontaneous regression of the herniated mass by >50% varied from 3 to 12 months [3].

Neurological deficits are present in 50-90% of patients with a herniated lumbar disc [11]. Surgical intervention is needed as an emergency when bladder symptoms or progressive neurological deficits are present. In the absence of these symptoms, 75-90% of patients with acute sciatica due to a protruded lumbar disc experience a resolution of symptoms without surgery [7]. Clinical improvement frequently correlates with radiographic disc regression but direct relationship is still debatable [7].

Due to progressive neurological deficits, patient was offered surgical treatment at initial presentation but somehow due to delay in the follow up patient could not be operated on time and on next follow up he came with perishing of symptoms partially and vanishing of a large disc radiologically. But surgical intervention should be considered strongly in the presence of cauda equina syndrome, progressive neurological deficits, intractable backache.

Spontaneous vindication of herniated large lumbar disc is a very infrequent but potential and possible phenomenon and its clinical relevancy cannot be ruled out entirely, however surgical feelings cannot be withheld on account of this unpredictable and perilous event.

Conclusion

Spontaneous regression of a large herniated disc is rare. The spontaneous regression may be due to the fact that larger fragments have a higher water content and may regress through dehydration / shrinkage, retraction and inflammation-mediated resorption.

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13. SHORT FORMS - MRI - magnetic resonance imaging, CT - computed tomography, LDH - lumbar disc herniations, EHL - extensor hallucis longus.